REMARKS

The amendment to the specification is submitted to correct a typographical error. Entry after final rejection is requested. No new matter is added.

Election of Species Requirement

Applicants acknowledge their election of Species X, directed to molten polymeric adhesive formed by extrusion, with traverse, and request rejoinder of the non-elected claims in view of the reasons for patentability as to the elected claims, discussed below.

Rejection under 35 U.S.C. §103(a)

Claims 1-5 and 8-15 and 18 stand rejected under 35 U.S.C. §103(a) as obvious over WO 95/14806 (WO '806), in view of either Scott et al (U.S. Patent No. 4,798,644), Reith (U.S. Patent No. 4,939,036) and optionally in view of Cross (U.S. Patent No. 4,731,143) and further in view of Fink (U.S. Patent No. 5,288,349). Applicants traverse this basis for rejection and respectfully request reconsideration and withdrawal thereof.

Applicants reiterate their comments in traverse of the application of the WO '806, Scott et al., Reith and Cross references, as set forth in their previous response, filed November 16, 2004. The Examiner is earnestly solicited to review Applicants' comments therein.

Distinctions over WO '806

WO '806 discloses the use of thermoplastic resin adhesives that have a "relatively high melt viscosity" (page 7, lines 7-9), but a range of melt indices from 2-500 dg/min (page 7, lines 11-15). In contrast, the molten polymer adhesives of the present invention are claimed to have melt indices at least 150. While this apparent overlap in melt index ranges would appear to establish a *prima facie* case of obviousness as to the present claims, the Examiner's attention is directed to In re Peterson, 315 F.3d 1325; 65 USPQ 2d 1379, wherein the court states:

> We therefore conclude that a prior art reference that discloses a range encompassing a somewhat narrower claimed range is sufficient to establish a prima facie case of obviousness. *That is not to say that the*

> *claimed composition having a narrower range is unpatentable*. Rather, the existence of *overlapping* or encompassing ranges shifts the burden to the applicant to show that his invention would not have been obvious...(Peterson at 1330; emphasis added)...

but that

> ...an applicant may rebut a prima facie case of obviousness by showing that the *prior art teaches away from the claimed invention in any material respect*. (Peterson at 1331; emphasis added).

In WO '806, the patentees' state:

> *As a result of this high melt viscosity*, the molten resin *does not flow as rapidly into the secondary backing* web as conventional hot melt adhesives, and more resin is available to penetrate and encapsulate the tufts in the primary backing (page 7, lines 15-20; emphasis added).

Thus, it is clear that the invention of WO '806 is dependent upon the viscosity of the molten resin being low enough to avoid flowing into the secondary backing web. As such, it seems clear that WO '806 teaches away from the use of low viscosity resin adhesives, such as those claimed herein.

At page 18 of the present specification, Applicants disclose that using an adhesive having a melt index greater than 150 requires special handling to avoid having the adhesive run (lines 17-25).

> However, when a low viscosity polymer adhesive with a melt index greater than 150 is used, it is difficult to apply a uniform layer of the adhesive to the backside of the primary backing because such low viscosity polymers tend to run rather than forming uniform films. It has been found that such low viscosity polymer adhesive can still be uniformly applied to the backside of the primary backing if the distance that the molten adhesive travels from the extrusion die before contacting the primary backing is kept at less than 5 cm, and more preferably at less than 1 cm.

It therefore seems highly unlikely that such a low viscosity adhesive, i.e. one having a melt index of at least 150, would be suitable for the WO '806 invention, since it is likely that such an adhesive would not only penetrate into the secondary backing layer, but would even have difficulty staying in place on the primary backing. Further,

it is clear from the exemplary data of WO '806 that such low viscosity adhesives were not even investigated, so the problem could not have been discovered by patentees.

Accordingly, Applicants submit that WO '806 teaches away from the use of low viscosity adhesives within the scope of the present claims, in spite of the very broad range of melt indices suggested by the reference. Withdrawal of the rejection is requested on this basis alone.

Alternatively, Applicants submit that the skilled artisan would have no expectation of success in selecting low viscosity adhesives from among those disclosed in WO '806 for use in their invention.

> To establish a prima facie case of obviousness, *three basic criteria must be met*. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. *Second, there must be a reasonable expectation of success*. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on the applicant's disclosure. MPEP § 2142, citing *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991); (emphasis added).

While WO '806 discloses a very broad range of possible melt indices for its thermoplastic resin adhesives, from 2-500 dg/min, it is unclear at what melt index their resin adhesives begin to fail the requirement quoted above. The patentees disclose a preferred range below 200 dg/min, and a most preferred range of from 2-50 dg/min (page 7, lines 13-15); and all of their exemplary data falls within this most preferred range: Example 1 = 10 g/10 min; Examples 2-4 = 35 g/10 min. However, the patentees of WO '806 provide no evidence that thermoplastic resin adhesives having the much lower viscosities, such as those having melt indices of at least 150, would not flow into the secondary backing web.

In fact, in view of Applicants' disclosure regarding the special handling necessary when using the molten polymer adhesives of the present invention, which are quite similar in composition but much lower in viscosity than the examples of WO '806, it seems clear that a skilled artisan would not expect the molten polymer adhesives according to the present invention to function in the manner required by

WO '806. Withdrawal of the rejection is requested on this basis, i.e. there would be no reasonable expectation of success in selecting polymer adhesives having melt indices of at least 150 for use in the WO '806 process, as claimed herein.

Further, Applicants respectfully submit that hundreds of possible thermoplastic resin adhesives are represented by the WO '806 melt index range, which essentially constitute a genus, overlapping with which the presently claimed adhesives represent a subgenus.

> The fact that a claimed species or subgenus is encompassed by a prior art genus is not sufficient by itself to establish a prima facie case of obviousness. In re Baird, 16 F.3d 380, 382, 29 USPQ2d 1550, 1552 (Fed. Cir. 1994) ("The fact that a claimed compound may be encompassed by a disclosed generic formula does not by itself render that compound obvious.") In re Jones, 958 F.2d 347, 350, 21 USPQ2d 1941, 1943 (Fed. Cir. 1992) (Federal Circuit has "decline[d] to extract from Merck [& Co. v. Biocraft Laboratories Inc., 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir. 1989)] the rule that...regardless of how broad, a disclosure of a chemical genus renders obvious any species that happens to fall within it."). MPEP 2144.08 (p. 2100-137).

The Examiner's attention is further directed to the Court's statement in In re Baird, to wit:

> A disclosure of millions of compounds does not render obvious a claim to three compounds, *particularly when that disclosure indicates a preference leading away from the claimed compounds*. (Baird at 1552; emphasis added).

As discussed above, the selection of the WO '806 polymer adhesive is specifically directed to avoiding flow of the molten resin into the secondary backing.

> *As a result of this high melt viscosity*, the molten resin *does not flow* as rapidly *into the secondary backing* web as conventional hot melt adhesives, and more resin is available to penetrate and encapsulate the tufts in the primary backing (WO '806 at page 7, lines 15-20; emphasis added).

Accordingly, Applicants respectfully submit that the requirement to select from literally hundreds of possible polymer adhesives within the scope of the WO '806 disclosure, in combination with the WO '806 teaching of a clear preference for high

melt viscosity adhesives which do not rapidly flow into the secondary backing, would lead the skilled artisan away from the use of low melt viscosity molten polymer adhesives within the scope of the present claims, and as such, the present claims would not have been obvious in view of the WO '806 disclosure. Withdrawal of the rejection is requested on this basis.

Likewise, as set forth in the Reisdorf Declaration, it can be seen that the *closest prior art examples*, i.e. tufted carpets made using the high viscosity polymer adhesives of the WO '806 examples, do not achieve a stated goal of the present application, i.e. "to impregnate the fiber networks of the tufts and contact the overwhelming majority of the fibers in the tufts" (page 10, lines 5-7). Withdrawal of the rejection is requested on this basis.

Secondary References

In the first Office Action, issued May 18, 2004, the Examiner applied the Scott et al., Reith and Cross references to address the failure of WO '806 to disclose the use of a drum laminator comprising a moving belt to compress a tufted primary backing and an ethylene adhesive, as well as a number of other deficiencies of that primary reference with respect to the dependent claims herein (page 4, last paragraph, bridging to page 5).

In the outstanding Office Action, the Examiner revises his application of the secondary references in an effort to provide some purported motivation to select lower viscosity polymer adhesives from those disclosed by WO '806:

> b) Reith teaches using 1st and 2nd hot melting adhesive layers for bonding a primary backing to a secondary backing, wherein the 1st hot melting adhesive layer having a viscosity at an activation temperature that "*is sufficiently low that the activated adhesive flows during the finishing step into and around the tuft stitches and the primary backing so that on solidification of the adhesive the tufts are securely bonded in the carpet structure and resist pull-out*" (col. 4, line 61 to col. 5, line 29; col. 6, lines 12-37).

In fact, Reith discloses that his adhesive composition is applied "in sheet form" (col. 4, lines 61-64), which is "inserted between the tufted primary backing and secondary backing" (col. 6, lines 8-17). In contrast, according to the present application, the molten, low viscosity polymer adhesives are extruded onto the

primary backing and must receive special handling to ensure uniform coating of the tufted primary backing (page 18, lines 17-25; claim 16), and are clearly not in the form of a self-supporting sheet (Reith, col. 7, lines 41-45) which is inserted between a primary and secondary backing.

Applicants respectfully submit that Reith provides no motivation to select lower melt viscosity polymer adhesives from among those disclosed by WO '806. In fact, Reith expresses a preference for use of adhesives that are

> ...about 30 to about 35 weight percent, low density polyethylene having a *melt index of about 15 to about 30 grams per ten minutes...*" (col. 6, lines 59-65; emphasis added).

Accordingly, the preferred melt index disclosed by Reith is within the preferred range of WO '806 (2-50 dg/min). Likewise, Reith merely discloses that his adhesives act to resist pull-out of carpet tufts (col. 6, lines 22-27), and is entirely silent about individual fibers. As such, it cannot be said that Reith provides motivation to select higher melt viscosity polymer adhesives from among those described in WO '806 to achieve the goals of the present invention.

Fink discloses a carpet and process for manufacturing the same. Specifically, Fink discloses extruding a sheet of isotactic polyolefin polymer onto the primary backing of a carpet (col. 4, lines 34-40). Fink provides no guidance as to the preferred melt index of the isotactic polyolefin. Notably, Fink discloses that polyethylene copolymers having acrylic acid and methacrylic acid comonomers have poor bond strength when used at 100% as hot melt adhesives for polypropylene primary backings (col. 10, lines 34-38; Table A).

At page 6 of the outstanding Office Action, the Examiner quotes a passage from the "Background" section of Fink, which states:

> [h]ot melt adhesives also must have low enough viscosities at temperatures employed in finishing to achieve good wetting of the backings and sufficient encapsulation of tuft stitches to make the tuft yarns resistant to pull-out, pilling and fuzzing".

However, the Examiner fails to note the remainder of the Background section of Fink, wherein it is disclosed:

> *While the hot-melt compositions and processes heretofore known* are considerably simpler than the latex process, the preparation of carpets of non-uniform quality has, at times, been encountered. Specifically, *such carpets using hot-melt adhesives cannot, with reproducible consistency, be prepared with high scrim bonds* (force required to remove the secondary backing from the finished carpet), *high tuft pull strength* (force required to pull one of the tufts out of the carpet), *and high fuzz resistance* (an indication of the individual carpet yarns to fuzz and form pills). (Col. 3, lines 51-61; emphasis added; also col. 4, lines 5-18).

Thus, while the passage quoted by the Examiner would seem to suggest that it is well-known in the art to modify hot-melt adhesive viscosity in order to achieve good resistance to tuft and fiber pull-out, it would seem that the quoted passage is instead merely part of a "wish list" expressed in cols. 2-3 of Fink. Fink's solution is to use an isotactic polypropylene adhesive, which is totally unrelated to the present invention. Withdrawal of the rejection is requested on this basis.

Rejection under 35 U.S.C. §103(a)

Claim 16 stands rejected under 35 U.S.C. §103(a) as obvious over WO '806, in view of either Scott et al., Reith, and optionally in view of Cross and further in view of Fink and Kasamatsu (U.S. Patent No. 4,708,629). Applicants traverse this basis for rejection and respectfully request reconsideration and withdrawal thereof.

Kasamatsu discloses a film-forming "T" die for low viscosity resin, especially for coating adhesive tapes (Abstract). The Examiner seems to suggest that the subject matter of claim 16 would have been obvious in view of Kasamatsu, in combination with the other cited references, in spite of the fact that Kasamatsu fails to disclose (1) coating of carpet backings, (2) the use of the claimed adhesives, (3) any information as to suitable melt indices of the adhesives to be used therein, and (4) any information as to the distance between the die and the substrate to be coated.

Applicants respectfully submit that Kasamatsu fails to address the deficiencies of the other cited references, and as such is irrelevant to the present claims.

As such, none of the cited references, either alone or in combination, would make obvious the claims of the present application. Withdrawal of the rejection and allowance of the claims is requested.

Respectfully submitted,

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